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LOGISTICS MANAGEMENT SYSTEMS IN
DESERT SHIELD/DESERT STORM
- HOW WELL DID THEY DO? -

B/

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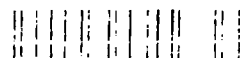
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LOGISTICS MANAGEMENT SYSTEMS IN DESERT SHIELD\DESERT STORM
HOW WELL DID THEY DO?

AN INDIVIDUAL STUDIES PROJECT

BY

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INTRODUCTION

As a young lieutenant, this author stood in a hot dusty storage yard as twenty-seven truckloads of plywood arrived from the port at Qui Nhon in the Republic of Vietnam. It was January 1972, most of the supported troops had left and a cease fire was pending. The lieutenant swore in frustration as an out of control distribution system produced one more indignity. The shipment had been ordered high priority for some now forgotten or completed project. The lumber was unexpected, no longer a valid requirement and of no use to the remaining U.S. forces. This and similar stories abound from every major contingency operation which the U.S. Army has conducted. After each operation, lessons learned are compiled and corrective action to preclude reoccurrence is initiated. Approved changes are incorporated into existing systems and if determined necessary new systems are designed and implemented. The purpose of this paper is to evaluate and analyze current and pending logistical management systems to determine if they provide efficient support during contingency operations. The lessons learned from Desert Shield/Desert Storm (DS/DS) have been used as the basis for initiation of an examination of the Total

Distribution System (TDS). TDS is not yet completed, however, sufficient effort has been conducted to provide the detail necessary to use it as the primary vehicle for review of existing systems and pending or proposed recommendations. Two hundred and sixty five lessons learned provide the basis of the TDS study. This magnitude makes detailed analysis of each impractical and somewhat redundant. The study grouped the lessons learned into five major categories for management purposes. Sufficient analysis can be conducted at this major category level to support conclusions and proposed recommendations.

GENERAL

During the 200 plus years of its existence the American Army has evolved into what is arguably the best fighting force in the world. The success of DS\DS has resulted in lavish praise for all who were involved. For many senior military leaders with memories of Vietnam this was an especially enjoyable turn around. Logistic accomplishments drew high praise from General Schwartzkopf when he said Operation Desert Storm was "...an absolute gigantic accomplishment, and I can't give credit enough to the logisticians and transporters who were able to pull this off." While logisticians can be justifiably proud now is not

the time to rest on their laurels. The forces of change are everywhere. The perception of a diminished threat coupled with shrinking resources and competing domestic needs will cause significant reduction in the Army's size and an increasing movement toward a CONUS based force.

Historically, size reductions in the Army have resulted in unacceptable decreases in readiness and effectiveness. The infamous forced retreat of Task Force Smith during an early engagement of the Korean War showed how quickly this degeneration of military forces can occur. "No More Task Force Smiths" has become the rallying cry of the Army Chief of Staff General Gordan R. Sullivan as he exhorts the Army to "break the mold" and insure that the future force possesses an edge no potential adversary can match.¹

DS\DS was a success but everything did not go perfectly. There is a disturbing tendency on the part of many today to offset DS\DS logistical shortcomings with comments such as " But in the end we won, didn't we?" This attitude can provide the seeds of future failure. As professionals we must critically appraise our victories as well as our losses to maintain the winning edge.

BACKGROUND

The Army is currently embarked on an effort to identify, analyze, and develop solutions to shortcomings

associated with the current distribution system which were highlighted during DS\DS. The need for this initiative was identified at the 26th Army Logistics Policy Committee conference in June 1991. As a result of this conference the Deputy Chief of Staff for Logistics formally tasked the Combined Arms Support Command to examine the entire distribution process (with a broadened definition of distribution) and to develop an objective Total Army Distribution System.

Initial organization established four functional task forces: Senders, Receivers, Movers and Automation-Communications. While not strictly limited to the DS/DS operation, the currency of these recent events weighed heavily in the identification, discussion and proposed resolution initiatives. For management purposes issues were grouped into five major categories: Containerization and Packaging; Distribution Management; Automation/Communications; Peace versus War Operations and Intransit Visibility/Total Asset Visibility. Issues were analyzed in the areas of Doctrine; Training; Leader Development; Organization; Materiel and Soldier for potential/recommended fixes.

DISCUSSION

Logistics management systems are designed to improve

the collective Combat Service Support (CSS) structures ability to support the combat soldier. Historically, these systems were developed and implemented to meet an identified need by an activity with a defined mission area of responsibility. Today the logistician's battlefield is inundated with management systems which monitor, track, report and profile every conceivable item of logistical significance. Do they work? A review of the DS\DS lessons learned and proposed solutions within the five major categories of the TDS study should give a clear picture of their performance during this recent and challenging event.

Containerization and Packaging.

The use of containers became a major issue during DS\DS. Containers are the most efficient method for transporting sustainment into an overseas theater. Breakbulk shipping and handling capabilities are no longer the industry standard. Breakbulk capabilities are vanishing and even if available, are not capable of supporting the timeliness and volumes of cargo involved in contingency operations. The advantage of the container system is obvious when the average loading time of two days is compared to the eleven days required to load breakbulk ships. When shipping containers to a mature theater such as Europe with its abundant commercial infrastructure, the off-loading and forward movement operation is simple and straight forward. The same infrastructure does not exist in many potential

contingency areas. In worst case scenarios little or no infrastructure exists and bare base operations would be required. Army support operations doctrine specifically addresses consideration of containers in contingency operations because of its advantages in reduced handling, shipload/discharge times and wide spread availability of container vessels in the U.S. merchant fleet.²

During DS\DS there was no container management system established prior to arrival of large numbers of containers. No viable Army tracking system existed nor was their sufficient materiel handling equipment (MHE) to handle containerized cargo, either in the port or at the supply support activities (SSA)s to which the cargo was directed. This situation resulted in a backlog at the sea port of debarkation (SPOD) and extended handling time for the containers and their contents. The combat divisions lacked the organic capability to unload containers from transporters. This precluded throughput past the point where MHE was available for unloading. Often transportation assets were forced to sit idle while contents were unstuffed from the containers. This condition was never fully overcome during the entire operation. The TDS study recommends:

1. Establishment of a containerization policy for wholesale resupply and sustainment.
2. Development of a contingency plan to deploy sufficient container handling assets into theater early on

to open the sea line of communication (SLOC).

3. Military Traffic Management Command (MTMC) should be designated as the single DoD manager for movement of cargo.

4. A container management plan and distribution plan has to be developed as part of the logistics annex for all operations plans.

These recommendations appear valid but are somewhat redundant. Army support contingency doctrine which was published in 1985 states:

"....effective use of this (containerization) system requires advance planning to insure necessary MHE and other support systems are available to expedite delivery to forward areas and subsequent container retrograde. The first step in this process must be promulgation of a clearly defined theater containerization policy addressing such factors as the acceptable level of containers and organizational responsibilities."

With the current Continental United States (CONUS) based, major regional contingency focus, the coordination and control of containers remains of valid concern. The long standing European focus with its developed infrastructure and an increasingly popular trend towards the use of cost efficient Host Nation Support (HNS) in our logistics planning have left this a vulnerable area. Contingency planning and operations doctrine needs to be reviewed for

validity in light of the lessons learned in DS\DS and increasing focus on regional contingency operations. Strong consideration needs to be given to fielding a military unit with organic capability to perform required container related handling and control operations. Concurrently, all Tables of Organization and Equipment (TOEs) need to be scrubbed to insure MHE availability and compatibility with accepted doctrine and anticipated future use of containers during contingency operations. Last, but by no means least, no validated system has been adopted by the Army for tracking containers and their contents. This capability must be acquired and incorporated into normal operating procedures.

Distribution Management.

Distribution management was plagued with confusion throughout DS\DS. This management shortfall was related to the containerization problem in that it was exacerbated by command decisions which resulted in the movement of large quantities of materiel to the theater in advance of the logistics personnel and equipment necessary to physically handle and manage the shipments. The intensity of the operation and rapid relocation and movement of deployed units and personnel made overcoming the resulting backlog extremely difficult and greatly increased the frustration of the supported customers.

The lack of a theater distribution plan during the

initial stages of the operation with a corresponding deployment schedule designed to meet existing requirements left the theater in a position of having to resort to a series of interim fixes. This situation was further aggravated by the backlog of materiel at the sea and aerial ports. Rather than being forwarded to the gaining activities materiel often required movement to interim staging areas where it lacked visibility and was virtually lost to the system. Combat units bore the brunt of the confusion and haphazard support caused by this evolving distribution plan. The lack of a cohesive plan was evidenced by some units receiving support from as many as eleven different supply support activities (SSAs) during the conduct of DS\DS.

The lack of a cohesive theater distribution plan generated recurring problems that further undermined efforts to provide responsive support. It became a vicious cycle as units generated multiple requisitions for the same requirements and materiel arrived at SSAs which no longer supported the unit for which the materiel was destined. Logistics management systems such as Air Lines of Communication (ALOC) and Direct Supply Support (DSS) are developed to key on designated SSAs and in turn the listed customers that they support. With deployment the majority of the peacetime relationships were changed as units shifted locations and affiliations. Numerous problems arose as follow on unit equipment and sustainment pipeline materiel

were delayed or frustrated due to systemic inability to adjust to unit relocations within the theater. This confusion clogged the container consolidation points (CCP) as the surge of intermingled follow on unit cargo and pipeline sustainment materiel accumulated. Attempts to reduce CCP congestion by restricting in bound materiel simply moved the backlog to carrier terminals, depots and vendors.

TDS recommendations to address the distribution management issue focused on:

1. Authorization of direct shipment to APOE\SPOE for full shipment release units (ALOC pallet\ surface container) destined to a single consignee.

2. Establish liaison at Major Commands to provide critical aircraft logistics support information as early as operationally possible.

3. Theater Materiel Management Center (MMC) should deploy and establish its theater distribution plan as early as possible.

4. Establish CONUS points of contact (POCs) as "Log Rears" for requirements validation.

5. Revisit Military Standard Requisition and Issue Procedures (MILSTRIP) to establish a more disciplined use of high priority requisitions.

The key corrective action to the distribution management problem does not appear to be addressed. The

central issue is identification of designated responsible activities to make each of these actions occur. Contingency plans must be developed which clearly assign planning and execution responsibilities. The tremendous surge of DS\DS could probably have been mitigated had responsibilities been more clearly defined in advance. The limited ability to bring in additional support units and the difficulty of catching on to a moving train were cited as the driving rationale in not deploying senior staff and management headquarters.

A specific example of this circumstance was the decision to not deploy the 310th Theater Army Area Command (TAACOM). In its place, the 22d Support Command (Provisional) was activated in country to accomplish the TAACOM mission. While the performance of the 22d Support Command (PROV) was commendable, it was not the unit which had planned and trained for this type of mission. The rationale for this type of decision must be documented and future planning and force structure actions adjusted accordingly. This same circumstance also occurred at lower levels. In many cases battalions and staff directorates were augmented on an adhoc basis to assist in performance of required missions which were beyond their doctrinal scope or capability.

The potential appears to exist to improve future performance with minor modification to existing procedures.

Assuming that future contingencies will require Echelon above Corps (EAC) operations, it would seem prudent to assign planning responsibilities for those functions now to the activity intended to perform that function during the next contingency. Because of the interfacing responsibilities between the Corps and the CONUS base, it is probable that designated elements and activities could initially operate in a forward\rear configuration with personnel shifted as the situation dictates. This would allow rear personnel to deploy as required, arrive knowledgeable and contribute immediately.

Automation\Communications.

The use of automation to support logistics operations has continued to increase and no evidence exists to indicate that this trend will not continue at an increasing rate. Automated management systems suffered from a myriad of problems during DS\DS. At least twenty six separate stovepipe data bases were in operation in the theater. They ran the gamut from manual and batch processing to state of the art on line systems. The spectrum of difficulties was almost limitless. Units deployed without computer systems because they believed they were garrison systems only or they lacked confidence that system possessed reliability or utility in a combat environment. The Unit Level Logistics System (ULLS) computers were purchased without modems or telecommunications software, thereby requiring output to be

manually delivered to supporting SSAs and other requiring activities. The decentralized automated service support system (DAS3) could not support the required wartime Direct Support Unit Service Support System (DS4) transaction volume. The Corps\Theater ADP Service Center-Phase II (CTASC-II) as currently configured will not support Standard Army Retail Supply System (SARSS) processing requirements of a fully deployed 5 1/3 division corps. Units deployed with hardware and software but did not have trained STAMIS operators. Major Commands had altered Standard Army Management Information Systems (STAMIS) baseline to suit command unique requirements thereby causing internal and interface problems. The Tactical Army CSS Computer System (TACCS)\TACCS-E and the ULLS Nondevelopment Item (NDI) were not compatible with the newly fielded Mobile Subscriber Equipment (MSE). The list of difficulties involved the majority of the automated logistics management systems which were deployed.

Automated management challenges were further complicated by the existing Army communications systems which were allocated for use by the logistics community. They did not meet the challenge and requirements of the modern battlefield. Many of the current automated management and communications systems were developed in parallel and do not complement one another. Specific shortfalls include a lack of sufficient communications equipment; a lack of

appropriate secure capability and lack of central management compatible with logistics automatic data processing equipment management.

The TDS study highlighted the following corrective actions for the automation issues:

1. Modify current (if possible) and objective STAMIS.
2. Deploy Defense Data Network (DDN) gateways for STAMIS
3. Develop and field multilevel secure gateways between TPN and MILNET.
4. Eliminate batch processing.
5. Develop and field pending systems.

In the communications area the recommended direction focused on:

1. Continue fielding of MSE.
2. Determine current CSS organic communications requirements.
3. Justify higher communications priority for CSS mission area.
4. Integrate multi-functional STAMIS using a shared relational data base.

The TDS approach is valid. Significant effort is being expended to coordinate development of future systems to improve battlefield utility and reliability. Concern is warranted due to the continued parochial development of functionally justified systems and the vagaries of the

development and fielding process for new systems. While parochialism is not necessarily detrimental, it has the potential for continuing the historical artificial separation of management information and is not likely to optimize design and utility.

Peace versus War Operations.

The traditional European focus with its developed infrastructure and forward deployed forces masked many voids and weaknesses in existing contingency deployment doctrine and planning. Equally ineffective at surfacing EAC issues was the National Training Center whose rotations were not designed to highlight or evaluate the kinds of issues which arose during DS\DS.

Decisions were made early on to front load combat forces into theater to deter further Iraqi aggression. The risk of reduced CSS capability was considered acceptable. As events unfolded the decision was correct, however the impact on logistics operations was significant. During the deployment phase the CSS to combat forces was .7 to 1. At no time prior to the conclusion of Desert Storm did the ratio exceed 1.4 to 1. Doctrinally the accepted ratio is almost twice that amount. Host Nation Support is the traditional method of offsetting risk of reduced deployment of CSS capability.

The impact of limiting early deployment of CSS has been previously addressed as related to distribution management.

TDS recommendations regarding transition from peace-to-war center on adjustment of doctrine to reflect changes resulting from CONUS basing future contingency forces.

Selected for highlighting included:

1. CONUS based sustainment.
2. Distribution based versus stockage based sustainment and associated force structure.
3. Adjustment of consumption factors.
4. Adjustment of packaging of sustainment from convenience of the wholesale base to effectiveness of the deploying force.
5. Wholesale base operating in theater.
6. Modular deployable sustainment force structure.

These and other issues have significant resource and system development implications. Most important in the process will be the logistics communities ability to synchronize the changes which must occur if these are implemented. Just as many of the challenges of DS\DS were generated from decisions which accepted risk of divergence from proven methods, factors and norms, changing doctrine has the potential to create a rhetoric and reality gap. Caution must be exercised to preclude an influx of new systems which have more public relations effort than capacity to meet contingency requirements. Conversely pending improvements in logistics management systems and advances in communications capabilities may allow for

radical changes to current doctrine or methods.

Intransit Visibility\Asset Visibility.

During crises situations the need for information is often insatiable. When information is not readily available it has a significant negative impact on the requestor because of the increased uncertainty generated. The TDS study focused on the lack of intransit visibility; real time asset visibility; and the lack of confidence in the automated requisitioning system. The intransit visibility issue was attributed to the interrelated problems of:

1. Noncompliance with existing documentation procedures.
2. Insufficient detail in transportation documentation to meet requirements of theater managers.
3. Lack of automated systems and supporting communications.
4. Inadequate supporting force structure.

Recommended corrective action included:

1. Review of doctrine\policy to determine reason for non execution.
2. Fielding of required automation, communications and force structure that will support desired management controls.
3. Review of emerging technologies for logistics applications.

Real time asset visibility of Class IX repair parts

became dependent on the logistics intelligence file (LIF) as it moved through the system. Often pertinent data was not available in the LIF due to insufficient input from activities instrumental in moving materiel through the pipeline. As designed, the LIF was not intended to be an on line real time status system. It was to be a repository for historical data which was to be updated on a scheduled basis and made available for management and analytical purposes. During DS\DS lack of a record in this historical file was often sufficient to cause initiation of new redundant requests for support to insure that required items were indeed on valid requisition.

TDS related recommendations focused on:

1. Suspending nonessential financial and management reports on automated logistics systems.
2. Modernize the LIF.
3. Improve automation and communications links which feed the LIF.

These actions to improve asset visibility were considered vital to the TDS effort.

The asset visibility issue became even more exacerbated by the failure of the automated logistics system to respond to customer needs. Resorting to facsimile, message and telephones resulted in an inordinate amount of off-line requisitioning. The logistics system was not designed to operate in a "by exception" mode. In addition to the

diversion of critical manpower, these non standard methods of requisitioning bypassed the supporting SSA and often perpetuated the lack of visibility problem which had generated the duplicate requirement in the first instance. Often rather than expediting delivery of required items, this circumvention resulted in numerous delays as the non-standard actions required manager intervention at every juncture in the process.

CONCLUSION

DS\DS provided a valuable opportunity to analyze our existing logistics management systems as well as providing a measure to evaluate emerging systems. The TDS effort is significant in scope and intent. A detailed review and analysis of this study found limited argument with the majority of the issues or the relative importance of the distribution system to effective logistics support.

First, when viewed from a slightly detached perspective, it appears that many of the difficulties experienced during DS\DS were exacerbated by risk acceptance decisions which chose to deviate from accepted practice. Because the outcome of that decision was acceptable, it is reasonable to expect similar decisions in future contingency operations. The impact of this and related early decisions should not be underestimated. They deserve careful study

prior to implementations of "fixes".

Second, it appeared that no existing paradigms need to be broken as a result of logistics lessons learned during DS\DS. TDS analysis of issues generally centered around how a pending "X" system would preclude a selected issue from future reoccurrence. Given the performance of previously fielded logistics management systems the credibility of the process which designs, tests and fields a new system must be reviewed in significant detail. Why did fundamental problems such as capacity, interoperability and fielding coordination occur in such magnitude during DS\DS.

Often mentioned but not detailed was the repository of responsibility for insuring that compatibility with total asset visibility will be one of the overarching specifications required of all relevant emerging automated logistics management and communications systems.

Third, the impact of the lack of confidence by the supported customer should not be underestimated. While every logistician has a need to know where critical equipment or parts are in the system, none of them are users of the requested item. That point where requirements enter the logistics system must be the focal point for provision of asset visibility. It is inherently obvious that the customer goes to his source of supply to satisfy his requirements. The customer must leave that point with the item in hand or confidence that the requirement is valid and being sent to

the unit. Subsequent visits should reinforce this confidence by providing visibility as the item comes closer. Failure to focus asset visibility on this interface will simply perpetuate a lack of confidence in the logistics system and generate priority abuse, hoarding and crisis management. The credibility of the logistics system resides at this interface and resources must be allocated accordingly.

A distinction should be made between intransit visibility and total asset visibility. Intransit visibility focuses on shipment mode as well as an item. Asset visibility focuses on a particular item. Both types of visibility must be accurate, timely and available at the point of initial interface. While much of the data may be similar, asset visibility and intransit visibility are not the same. Care must be taken to avoid inadvertently combining or interchanging the two concepts.

RECOMMENDATIONS

The following recommendations are in addition to the recommendations included in TDS and when implemented will improve existing and pending logistics management systems:

1. Develop modular TOEs that possess a forward\rear capability that can be deployed\redeployed incrementally to support development of theater logistics infrastructure.
2. Consolidate management centers to assist in unity of

effort and improve intransit\asset visibility.

3. Establish logistics system credibility by focusing information at point of the logistics system\customer interface.

4. Evaluate increased authorization and use of forward\rear\liaison elements organic to single units to improve unity of effort.

5. Emphasize standardization of customer interface procedures to reduce turmoil and confusion of unit relocations.

6. Support habitual relationships in selection and deployment of nondivisional SSAs and maintenance units.

7. Authorize communications capability sufficient to support mission requirements.

ENDNOTES

1. Michael P.W. Stone and Gordon R. Sullivan, The United States Army Posture Statement FY 93 Executive Summary, 9.

2. U.S. Department of the Army, Field Manual 100-16: Support Operations: Echelons Above Corps (Washington, D.C.: 16 April 1985), 6-89 (here after referred to as "Field Manual 100-16").

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